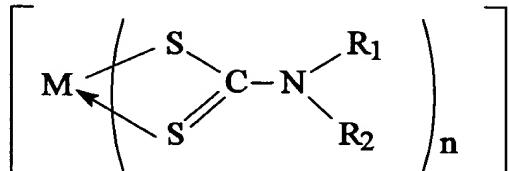


**IN THE CLAIMS:**

Claims 1-8 (Canceled)

Claim 9 (Currently Amended): A multi-ligand metal chelate compound comprising:  
at least one metal species selected from the group consisting of zinc, manganese, iron,  
molybdenum, tin and antimony, the metal species having multiple coordinating sites;  
at least one polydentate chelate ligand having sulfur as a coordinating atom, the at least  
one ligand coordinating to at least one of the multiple coordination sites of the at least one metal  
species and having a formula selected from the group consisting of the following formulas (A)  
to (S):

(A)



wherein R<sub>1</sub> is the same as or different from R<sub>2</sub>,

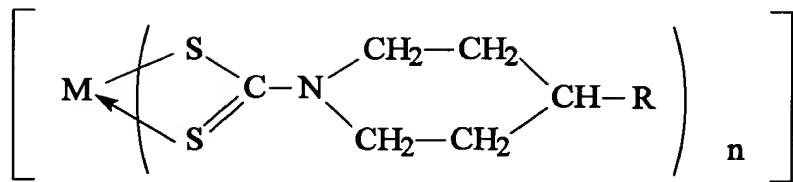
wherein when R<sub>1</sub> and R<sub>2</sub> are the same, each of R<sub>1</sub> and R<sub>2</sub> is H, -CH<sub>3</sub>, -C<sub>2</sub>H<sub>5</sub>, -C<sub>3</sub>H<sub>7</sub> (straight chain), iso-C<sub>3</sub>H<sub>7</sub>, -C<sub>4</sub>H<sub>9</sub> (straight chain), iso-C<sub>4</sub>H<sub>9</sub>, tert-C<sub>4</sub>H<sub>9</sub> or -C<sub>6</sub>H<sub>5</sub>, and

wherein when R<sub>1</sub> and R<sub>2</sub> are different, R<sub>1</sub> is H and R<sub>2</sub> is -CH<sub>3</sub>, -C<sub>2</sub>H<sub>5</sub>, -C<sub>3</sub>H<sub>7</sub> (straight chain), iso-C<sub>3</sub>H<sub>7</sub>, iso-C<sub>4</sub>H<sub>9</sub>, tert-C<sub>4</sub>H<sub>9</sub> or -C<sub>6</sub>H<sub>5</sub> (straight chain); or R<sub>1</sub> is -CH<sub>3</sub> or -C<sub>2</sub>H<sub>5</sub> and R<sub>2</sub> is -C<sub>6</sub>H<sub>5</sub>,

wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2,

(B)



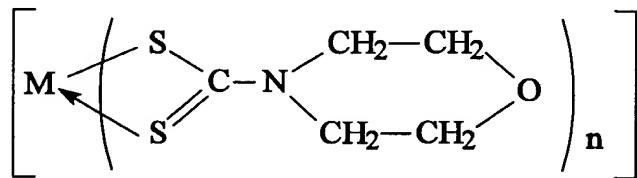
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wherein R is H, -CH<sub>3</sub> or -C<sub>2</sub>H<sub>5</sub>, and

wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2,

(C)

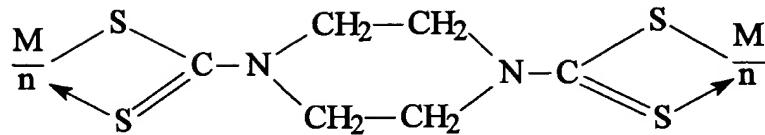


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wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2,

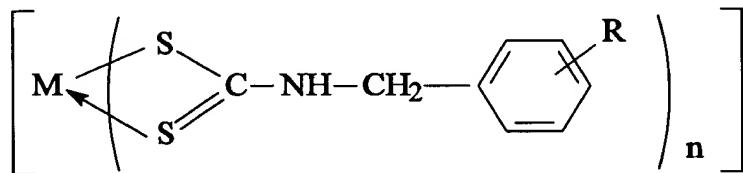
(D)



wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2,

(E)

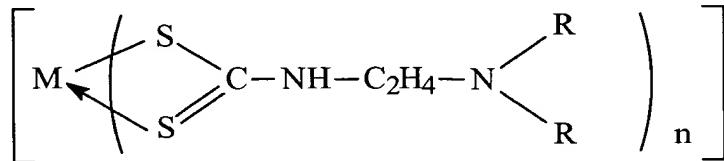


wherein R is ortho-NO2, para-NO2, meta-OCH3, meta-CH3 or meta-C2H5, and

wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2,

(F)

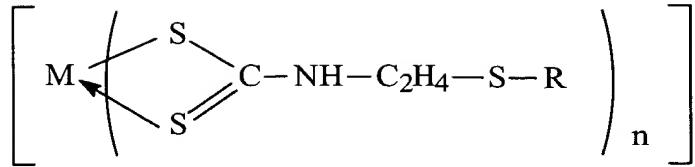


wherein R is -CH3, -C2H5, -C3H7 (straight chain) or iso-C3H7, and

wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2,

(G)

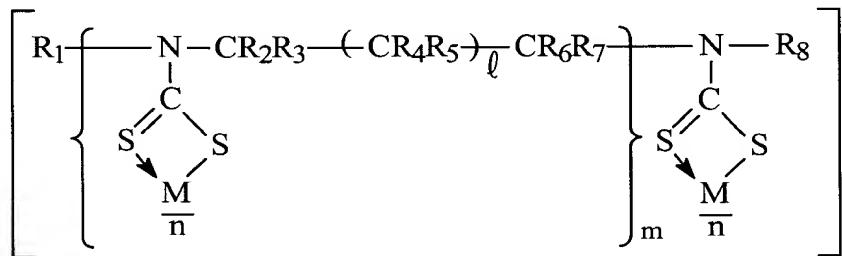


wherein R is H or an alkyl group of 1-12 carbon atoms, and

wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2.

(H)



wherein when m is 1 and l is 0,  $\text{R}_1\text{-R}_3$  and  $\text{R}_6\text{-R}_8$  are H; or  $\text{R}_1$  is  $-\text{CH}_3$  and  $\text{R}_2\text{-R}_3$ ,  $\text{R}_6\text{-R}_8$  are H; or  $\text{R}_1$  is  $-\text{C}_2\text{H}_5$  and  $\text{R}_2\text{-R}_3$ ,  $\text{R}_6\text{-R}_8$  are H; or  $\text{R}_1$  is  $-\text{C}_3\text{H}_5$  (straight chain) or iso- $\text{C}_3\text{H}_5$  and  $\text{R}_2\text{-R}_3$ ,  $\text{R}_6\text{-R}_8$  are H; or  $\text{R}_1$  is  $-\text{C}_4\text{H}_9$  (straight chain), iso- $\text{C}_4\text{H}_9$  or tert- $\text{C}_4\text{H}_9$ , and  $\text{R}_2\text{-R}_3$ ,  $\text{R}_6\text{-R}_8$  are H; or  $\text{R}_2$  and  $\text{R}_3$  are  $-\text{CH}_3$  and  $\text{R}_1$ ,  $\text{R}_5$ ,  $\text{R}_7\text{-R}_8$  are H; or  $\text{R}_2$ ,  $\text{R}_3$ ,  $\text{R}_6$  and  $\text{R}_7$  are  $-\text{CH}_3$  and  $\text{R}_1$  and  $\text{R}_8$  are H; or  $\text{R}_1$  and  $\text{R}_8$  are  $-\text{CH}_3$  and  $\text{R}_2\text{-R}_3$ ,  $\text{R}_6\text{-R}_7$  are H; or  $\text{R}_1$  and  $\text{R}_8$  are  $-\text{C}_2\text{H}_5$  and  $\text{R}_2\text{-R}_3$ ,  $\text{R}_6\text{-R}_7$  are H; or  $\text{R}_1$  and  $\text{R}_8$  are  $-\text{C}_3\text{H}_5$  (straight chain) or iso- $\text{C}_3\text{H}_5$  and  $\text{R}_2\text{-R}_3$ ,  $\text{R}_6\text{-R}_7$  are H; or  $\text{R}_1$  and  $\text{R}_8$  are  $-\text{C}_4\text{H}_9$  (straight chain), iso- $\text{C}_4\text{H}_9$  or tert- $\text{C}_4\text{H}_9$ , and  $\text{R}_2\text{-R}_3$ ,  $\text{R}_6\text{-R}_7$  are H; or  $\text{R}_2$  and  $\text{R}_6$  are  $-\text{C}_6\text{H}_5$  and  $\text{R}_1$ ,  $\text{R}_3$ ,  $\text{R}_7\text{-R}_8$  are H, and

wherein when m is 1 and l is 1, R<sub>1</sub>-R<sub>8</sub> are H; or R<sub>4</sub> and R<sub>5</sub> are -CH<sub>3</sub> and R<sub>1</sub>-R<sub>3</sub>, R<sub>6</sub>-R<sub>8</sub> are

H, and

wherein when m is 1 and l is selected from 2, 3, 4, 5, 6 and 7, R<sub>1</sub>-R<sub>8</sub> are H, and

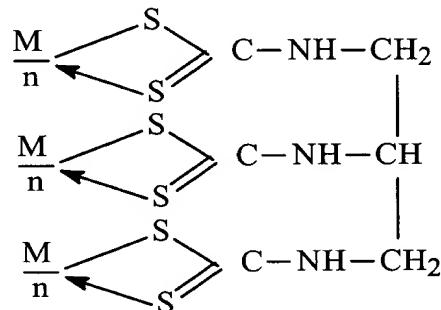
wherein when m is selected from 2, 3, 4, 5, 6, 7, 8 and 9 and l is 0, R<sub>1</sub>-R<sub>8</sub> are H; or R<sub>2</sub> is  
-CH<sub>3</sub> and R<sub>1</sub>, R<sub>3</sub>, R<sub>6</sub>-R<sub>8</sub> are H, and

wherein when m is selected from 2, 3, 4, 5, 6, 7, 8 and 9 and l is 1, R<sub>1</sub>-R<sub>8</sub> are H, and

wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2,

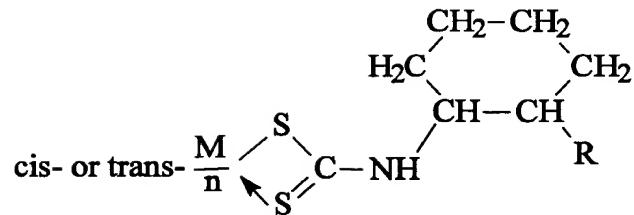
(I)



wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

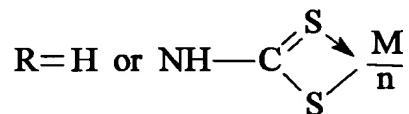
wherein when M is manganese or iron, n is 1 or 2,

(I)



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wherein

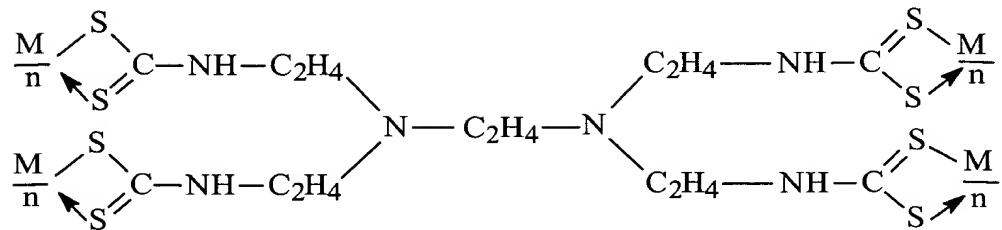


and

wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2.

(K)

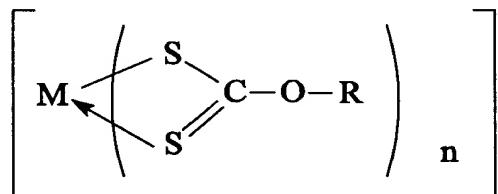


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wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2,

(L)



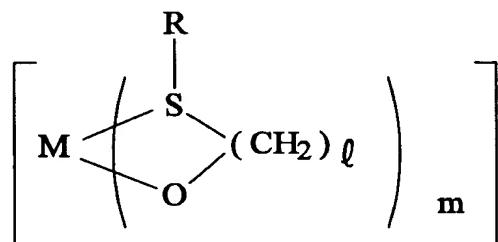
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wherein R is a linear or branched alkyl group of 1-12 carbon atoms, and

wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2,

(M)

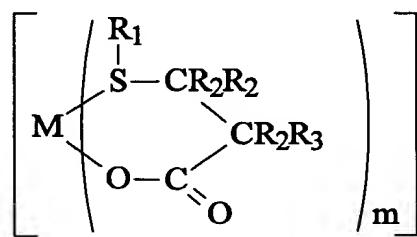


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wherein R is H and ℓ is selected from 2 and 3; or R is an alkyl group of 1-12 carbon atoms  
and ℓ is selected from 2 and 3, and

wherein when M is zinc, molybdenum, tin or antimony, m is 1, and  
wherein when M is manganese or iron, m is 1 or 2,

(N)

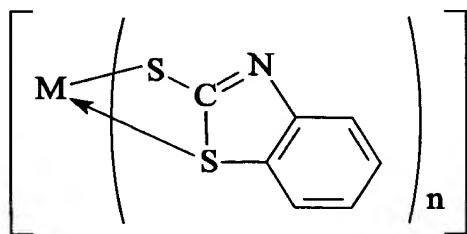


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wherein R1-R3 are H; or R1 is an alkyl group of 1-12 carbon atoms, R2-R3 are H; or R1-R2 are H, R3 is -NH2, and

wherein when M is zinc, molybdenum, tin or antimony, m is 1, and  
wherein when M is manganese or iron, m is 1 or 2,

(O)

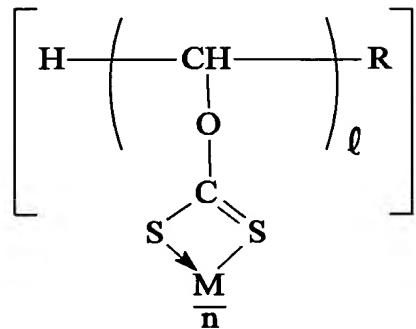


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wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2,

(P)

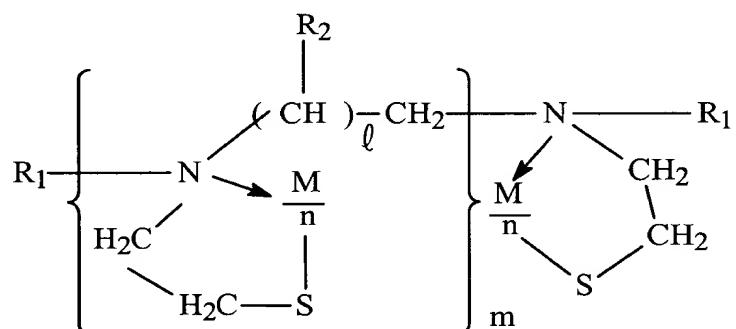


wherein  $\ell$  is selected from 1, 2, 3, 4, 5 and 6, R is H or -COOH, and

wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2,

(Q)



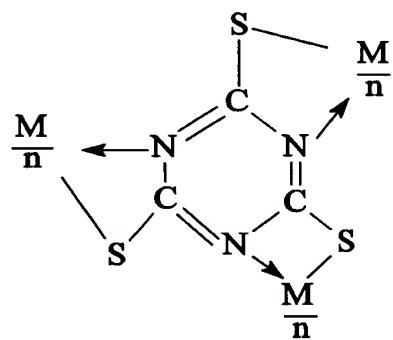
wherein R<sub>1</sub> and R<sub>2</sub> are H, ℓ is 1 or 2, m is selected from 1, 2, 3, 4, 5 and 6; or R<sub>1</sub> is -C<sub>2</sub>H<sub>4</sub>S-

R<sub>2</sub> is H, ℓ is 1 or 2, m is selected from 1, 2, 3, 4, 5 and 6, and

wherein when M is zinc, molybdenum, tin or antimony, m is 1, and

wherein when M is manganese or iron, m is 1 or 2,

(R)

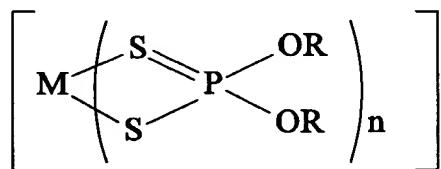


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wherein when M is zinc, molybdenum, tin or antimony, m is 1, and

wherein when M is manganese or iron, m is 1 or 2, and

(S)



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wherein R is an alkyl group having one to twelve carbon atoms, and

wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2;

and

at least one condensed phosphate and/or polyoxyacidic acid coordinated to the remaining coordination sites.

Claim 10 (Previously Presented): An aqueous lubricant comprising the multi-ligand metal chelate compound according to claim 9, suspended or dispersed in an aqueous liquid.

Claim 11 (Previously Presented): An aqueous lubricant as in claim 10, further comprising a soluble condensed phosphate salt, a fatty acid sodium salt, a fatty acid potassium salt and/or a soluble polycarboxylic acid salt.

Claim 12 (Previously Presented): A method of forming a lubricating film on a metal material comprising:

forming a phosphate film on the metal material, the phosphate film comprising zinc and/or iron ions; and

immersing the metal material in the aqueous lubricant of claim 10, whereby a ligand not having sulfur as a coordinating atom reacts with the zinc and/or iron ions in said phosphate film.

Claim 13 (Previously Presented): A method as in claim 12, wherein a crystalline polynuclear metal chelate compound is formed on the phosphate film.

Claim 14 (Previously Presented): A method of forming a lubricating film on a metal material comprising:

forming a phosphate film on the metal material, the phosphate film comprising zinc and/or iron ions; and

immersing the metal material in the aqueous lubricant of claim 11, whereby a ligand not having sulfur as a coordinating atom reacts with the zinc and/or iron ions in said phosphate film.

Claim 15 (Previously Presented): A method as in claim 14, wherein a crystalline polynuclear metal chelate compound is formed on the phosphate film.

Claim 16 (Previously Presented): A method of forming a lubricating film on at least one surface selected from a metal material surface and a metal mold surface, comprising applying the aqueous lubricant of claim 10 to the at least one surface.

Claim 17 (Previously Presented): A method as in claim 16, further comprising drying the at least one surface after application of the aqueous lubricant.

Claim 18 (Previously Presented): A method as in claim 17, further comprising plastically working the metal material.

Claim 19 (Previously Presented): A method as in claim 18, further comprising contacting the dried aqueous lubricant with a soluble condensed phosphate salt and/or a soluble polyoxycarboxylic acid salt before plastically working the metal material.

Claim 20 (Previously Presented): A method of forming a lubricating film on at least one surface selected from a metal material surface and a metal mold surface, comprising applying the aqueous lubricant of claim 11 to the at least one surface.

Claim 21 (Previously Presented): A method as in claim 20, further comprising drying the at least one surface after application of the aqueous lubricant.

Claim 22 (Previously Presented): A method as in claim 21, further comprising plastically working the metal material.

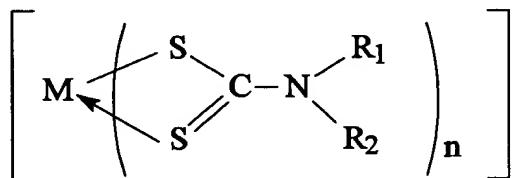
Claim 23 (Previously Presented): A method as in claim 22, further comprising contacting the dried aqueous lubricant with a soluble condensed phosphate salt and/or a soluble polyoxycarboxylic acid salt before plastically working the metal material.

Claim 24 (Currently Amended): A compound comprising:  
at least one multi-valent metal ion selected from the group consisting of zinc, manganese, iron, molybdenum, tin and antimony,  
at least one polydentate chelate ligand having at least two sulfur atoms as coordinating atoms, the at least two sulfur coordinating atoms being bound to the at least one metal ion, the

at least one ligand having a formula selected from the group consisting of the following formulas

(A) to (L), (O), (P) and (S):

(A)



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wherein R<sub>1</sub> is the same as or different from R<sub>2</sub>,

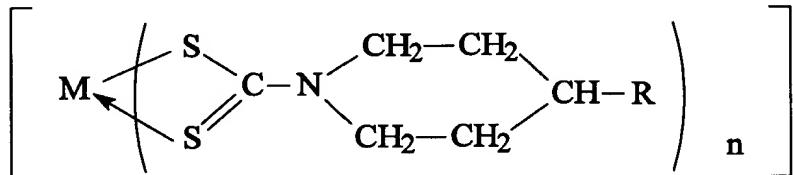
wherein when R<sub>1</sub> and R<sub>2</sub> are the same, each of R<sub>1</sub> and R<sub>2</sub> is H, -CH<sub>3</sub>, -C<sub>2</sub>H<sub>5</sub>, -C<sub>3</sub>H<sub>7</sub> (straight chain), iso-C<sub>3</sub>H<sub>7</sub>, -C<sub>4</sub>H<sub>9</sub> (straight chain), iso-C<sub>4</sub>H<sub>9</sub>, tert-C<sub>4</sub>H<sub>9</sub> or -C<sub>6</sub>H<sub>5</sub>, and

wherein when R<sub>1</sub> and R<sub>2</sub> are different, R<sub>1</sub> is H and R<sub>2</sub> is -CH<sub>3</sub>, -C<sub>2</sub>H<sub>5</sub>, -C<sub>3</sub>H<sub>7</sub> (straight chain), iso-C<sub>3</sub>H<sub>7</sub>, iso-C<sub>4</sub>H<sub>9</sub>, tert-C<sub>4</sub>H<sub>9</sub> or -C<sub>6</sub>H<sub>5</sub> (straight chain); or R<sub>1</sub> is -CH<sub>3</sub> or -C<sub>2</sub>H<sub>5</sub> and R<sub>2</sub> is -C<sub>3</sub>H<sub>7</sub>.

wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2,

(B)



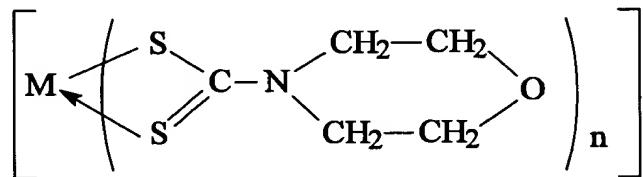
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wherein R is H, -CH<sub>3</sub> or -C<sub>2</sub>H<sub>5</sub>, and

wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2,

(C)

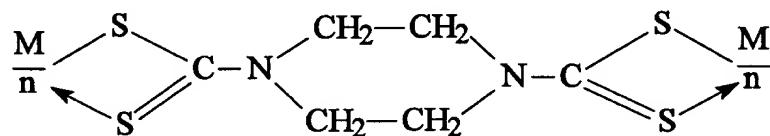


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wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2,

(D)

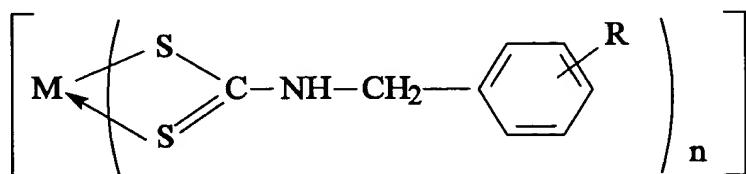


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wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2,

(E)



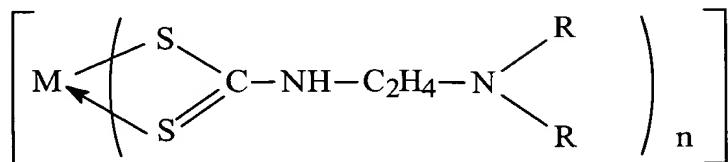
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wherein R is ortho-NO<sub>2</sub>, para-NO<sub>2</sub>, meta-OCH<sub>3</sub>, meta-CH<sub>3</sub> or meta-C<sub>2</sub>H<sub>5</sub>, and

wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2,

(F)

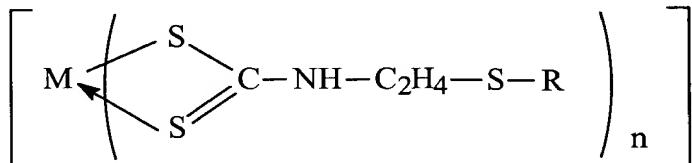


wherein R is -CH<sub>3</sub>, -C<sub>2</sub>H<sub>5</sub>, -C<sub>3</sub>H<sub>7</sub> (straight chain) or iso-C<sub>3</sub>H<sub>7</sub>, and

wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2,

(G)

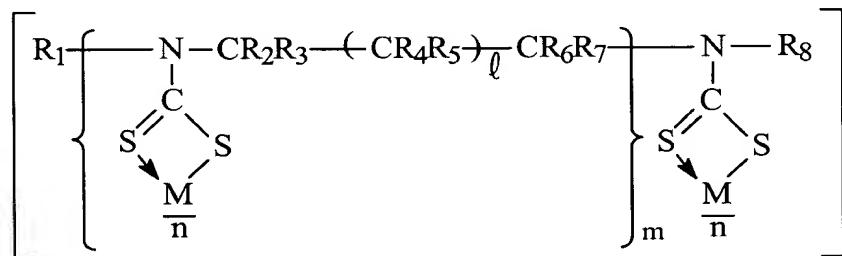


wherein R is H or an alkyl group of 1-12 carbon atoms, and

wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2,

(H)



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wherein when m is 1 and ℓ is 0, R<sub>1</sub>-R<sub>3</sub> and R<sub>6</sub>-R<sub>8</sub> are H; or R<sub>1</sub> is -CH<sub>3</sub> and R<sub>2</sub>-R<sub>3</sub>, R<sub>6</sub>-R<sub>8</sub> are H; or R<sub>1</sub> is -C<sub>2</sub>H<sub>5</sub> and R<sub>2</sub>-R<sub>3</sub>, R<sub>6</sub>-R<sub>8</sub> are H; or R<sub>1</sub> is -C<sub>3</sub>H<sub>5</sub> (straight chain) or iso-C<sub>3</sub>H<sub>5</sub> and R<sub>2</sub>-R<sub>3</sub>, R<sub>6</sub>-R<sub>8</sub> are H; or R<sub>1</sub> is -C<sub>4</sub>H<sub>9</sub> (straight chain), iso-C<sub>4</sub>H<sub>9</sub> or tert-C<sub>4</sub>H<sub>9</sub>, and R<sub>2</sub>-R<sub>3</sub>, R<sub>6</sub>-R<sub>8</sub> are H; or R<sub>2</sub> and R<sub>3</sub> are -CH<sub>3</sub> and R<sub>1</sub>, R<sub>6</sub>-R<sub>8</sub> are H; or R<sub>2</sub> and R<sub>6</sub> are -CH<sub>3</sub> and R<sub>1</sub>, R<sub>3</sub>, R<sub>7</sub>-R<sub>8</sub> are H; or R<sub>2</sub>, R<sub>3</sub>, R<sub>6</sub> and R<sub>7</sub> are -CH<sub>3</sub> and R<sub>1</sub> and R<sub>8</sub> are H; or R<sub>1</sub> and R<sub>8</sub> are -CH<sub>3</sub> and R<sub>2</sub>-R<sub>3</sub>, R<sub>6</sub>-R<sub>7</sub> are H; or R<sub>1</sub> and R<sub>8</sub> are -C<sub>2</sub>H<sub>5</sub> and R<sub>2</sub>-R<sub>3</sub>, R<sub>6</sub>-R<sub>7</sub> are H; or R<sub>1</sub> and R<sub>8</sub> are -C<sub>3</sub>H<sub>5</sub> (straight chain) or iso-C<sub>3</sub>H<sub>5</sub> and R<sub>2</sub>-R<sub>3</sub>, R<sub>6</sub>-R<sub>7</sub> are H; or R<sub>1</sub> and R<sub>8</sub> are -C<sub>4</sub>H<sub>9</sub> (straight chain), iso-C<sub>4</sub>H<sub>9</sub> or tert-C<sub>4</sub>H<sub>9</sub>, and R<sub>2</sub>-R<sub>3</sub>, R<sub>6</sub>-R<sub>7</sub> are H; or R<sub>2</sub> and R<sub>6</sub> are -C<sub>6</sub>H<sub>5</sub> and R<sub>1</sub>, R<sub>3</sub>, R<sub>7</sub>-R<sub>8</sub> are H, and

wherein when m is 1 and ℓ is 1, R<sub>1</sub>-R<sub>8</sub> are H; or R<sub>4</sub> and R<sub>5</sub> are -CH<sub>3</sub> and R<sub>1</sub>-R<sub>3</sub>, R<sub>6</sub>-R<sub>8</sub> are H, and

wherein when m is 1 and ℓ is selected from 2, 3, 4, 5, 6 and 7, R<sub>1</sub>-R<sub>8</sub> are H, and

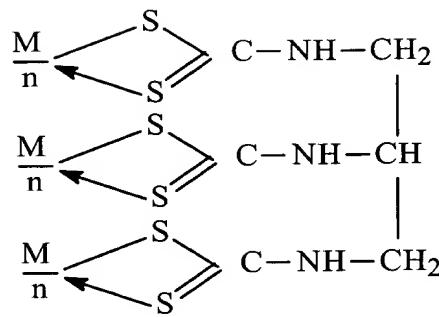
wherein when m is selected from 2, 3, 4, 5, 6, 7, 8 and 9 and ℓ is 0, R<sub>1</sub>-R<sub>8</sub> are H; or R<sub>2</sub> is -CH<sub>3</sub> and R<sub>1</sub>, R<sub>3</sub>, R<sub>6</sub>-R<sub>8</sub> are H, and

wherein when m is selected from 2, 3, 4, 5, 6, 7, 8 and 9 and ℓ is 1, R<sub>1</sub>-R<sub>8</sub> are H, and

wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2,

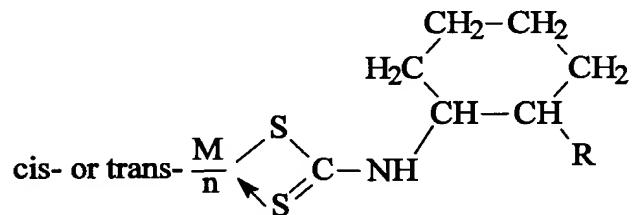
(I)



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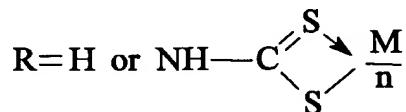
wherein when M is zinc, molybdenum, tin or antimony, n is 1, and  
wherein when M is manganese or iron, n is 1 or 2,

(J)



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wherein

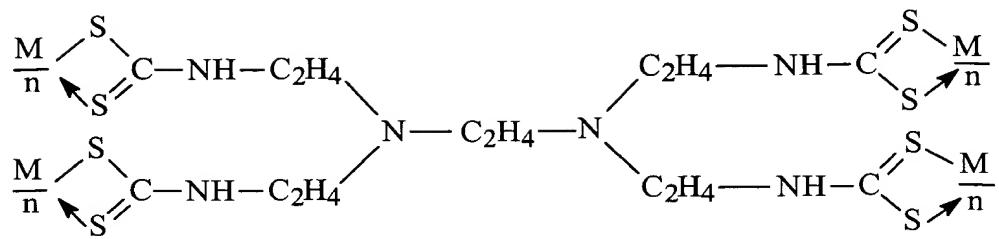


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and

wherein when M is zinc, molybdenum, tin or antimony, n is 1, and  
wherein when M is manganese or iron, n is 1 or 2,

(K)

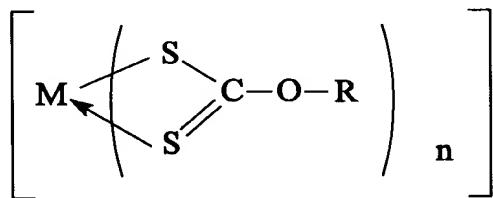


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wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2,

(L)



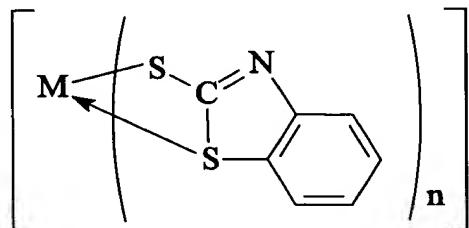
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wherein R is a linear or branched alkyl group of 1-12 carbon atoms, and

wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2,

(O)

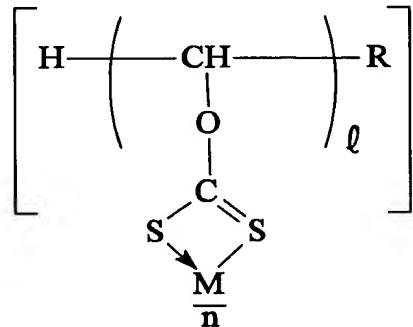


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wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2, and

(P)



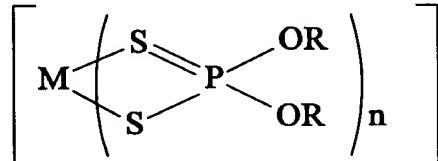
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wherein  $\ell$  is selected from 1, 2, 3, 4, 5 and 6, R is H or -COOH, and

wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2, and

(S)



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wherein R is an alkyl group having one to twelve carbon atoms, and

wherein when M is zinc, molybdenum, tin or antimony, n is 1, and

wherein when M is manganese or iron, n is 1 or 2;

and

at least two other groups bound to the at least one metal ion, the groups selected from condensed phosphate and polyoxycarboxylic acid.

Claim 25 (Previously Presented): An aqueous lubricant comprising the compound of claim 24 suspended or dispersed in an aqueous liquid.

Claim 26 (Previously Presented): An aqueous lubricant as in claim 25, further comprising a soluble condensed phosphate salt, a fatty acid sodium salt, a fatty acid potassium salt and/or a soluble polyoxycarboxylic acid salt.

Claim 27 (Previously Presented): An aqueous lubricant as in claim 26, further comprising an anionic surfactant or a non-ionic surfactant, wherein the aqueous lubricant has a pH between 8-13.

Claim 28 (Previously Presented): A compound as in claim 24, wherein the at least one metal ion is a zinc ion and the at least two other groups bound to the zinc ion are selected from condensed phosphate and polyoxycarboxylic acid.

Claim 29 (Previously Presented): A compound as in claim 28, wherein the condensed phosphate is bound to the zinc ion and the condensed phosphate is tripolyphosphate.

Claim 30 (Previously Presented): A compound as in claim 29, wherein the polydentate chelate ligand is N,N-diethyldithiocarbamate.

Claim 31 (Previously Presented): A compound as in claim 24, wherein the polydentate chelate ligand is N,N-diethyldithiocarbamate.

Claim 32 (Previously Presented): A compound as in claim 31, wherein the condensed phosphate is bound to the at least one metal ion and the condensed phosphate is tripolyphosphate.

Claim 33 (Previously Presented): A compound as in claim 24, comprising two multi-valent metal ions.

Claim 34 (Previously Presented): A compound as in claim 33, wherein the condensed phosphate is tripolyphosphate.

Claim 35 (Previously Presented): A compound as in claim 34, wherein the polydentate chelate ligand is N,N-diethyldithiocarbamate.

Claim 36 (Previously Presented): A method of forming a lubricating film on a metal surface, comprising mixing the compound of claim 24 with an aqueous liquid, thereby forming an aqueous lubricant, applying the aqueous lubricant to the metal surface and drying the metal surface after application of the aqueous lubricant.

Claim 37 (Previously Presented): A method of forming a lubricating film on a metal surface, comprising mixing the compound of claim 29 with an aqueous liquid, thereby forming an aqueous lubricant, applying the aqueous lubricant to the metal surface and drying the metal surface after application of the aqueous lubricant.

Claim 38 (Previously Presented): A method of forming a lubricating film on a metal surface, comprising mixing the compound of claim 35 with an aqueous liquid, thereby forming an aqueous lubricant, applying the aqueous lubricant to the metal surface and drying the metal surface after application of the aqueous lubricant.

Claim 39 (Canceled)

Claim 40 (Currently Amended): A compound as in claim 9 [39], wherein the at least one metal species M is selected from the group consisting of divalent zinc, divalent manganese, trivalent manganese, divalent iron, trivalent iron, tetravalent molybdenum, pentavalent molybdenum,  $\{(\text{MoOS})_2\}^{2+}$ ,  $\{\text{Mo}_2\text{S}_4\}^{2+}$ , divalent tin, tetravalent tin, trivalent antimony, and pentavalent antimony,  $(\text{MoO})^{2+}$  and  $(\text{MoO})^{2-}$ .

Claim 41 (Currently Amended): A lubricant as in claim 10, further comprising dissolved in an aqueous solvent comprising a compound as in claim 39 and an anionic or non-ionic surfactant, wherein the aqueous lubricant has a pH between 8.0 and 13.0.

Claim 42 (Previously Presented): A lubricant as in claim 41, further comprising a soluble condensed phosphate salt, a fatty acid sodium salt, a fatty acid potassium salt and/or a soluble polyoxycarboxylic acid salt.

Claim 43 (Previously Presented): A lubricant as in claim 42, wherein the lubricant is substantially free of oil and organic solvents.

Claim 44 (Previously Presented): A method for forming a lubricating film on a metal surface, comprising applying the lubricant of claim 43 to the metal surface and drying the metal surface.

Claim 45 (Previously Presented): A method as in claim 44, wherein the metal surface is substantially free of oil.

Claim 46 (Previously Presented): A method as in claim 45, further comprising plastically deforming the metal.

Claim 47 (Currently Amended): A compound as in claim 39 9, wherein the at least one metal species M is a zinc ion and B is independently selected from condensed phosphate and polyoxycarboxylic acid.

Claim 48 (Currently Amended): A compound as in claim 47, wherein the at least one condensed phosphate B is tripolyphosphate and the tripolyphosphate is bound to the zinc ion.

Claim 49 (Currently Amended): A compound as in claim 39 9, wherein the at least one ligand A is N,N-diethyldithiocarbamate.

Claim 50-57 (Canceled)